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TIDEWATER METROPOLITAN AREA TRANSPORTATION SURVEY STUDY

By

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ABSTRACT

A survey, carried out in southeastern Virginia to identify public opinion regarding requirements for future public transportation, was initially reported in "Urban Transportation: Perspectives on Mobility and Choice" by the NASA/ASEE 1974 Engineering Systems Design Team. The results have been analysed herein to identify effects of age and income level on attitudes concerning city living and on importance of various characteristics (accessibility, speed, cost, etc.) desired for urban transportation systems.

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INTRODUCTION

Spiraling gasoline prices, increasing automobile congestion, and concomitant pollution have been catalysts in the nation's search for a viable alternative to the private automobile as a form of transportation. A number of solutions have been suggested, one of which includes the development of a more effective mass transportation system for urban areas.

While this may seem a logical answer to a perplexing question, it is evident that a number of obstacles exist. One cannot ignore the love affair which the average American has with the car. A car in the garage seems to be as American as apple pie. This long-time relationship is not easy to change for it has provided ample advantages for every problem it has caused. The freedom and versatility of mobility accompanied by personal privacy have acted as sufficient reinforcements for the continued use of the automobile as a prime mode of transportation.

Mass transportation to date has shown all too little concern for the needs of the consumer including those system characteristics which are deemed desirable. This present study attempts to partially fill this vacuum.

TIDEWATER METROPOLITAN AREA TRANSPORTATION SURVEY BACKGROUND

This questionnaire was sponsored by the Virginia Metropolitan Areas Transportation Study Commission. The questionnaire was developed by Mr. D. William Conner and Mr. Bobby G. Batten at NASA and was distributed by the Virginia Metropolitan Study Commission with the cooperation of the Tidewater Jaycees. An estimated ten thousand surveys were personally delivered to respondents by the Jaycees. Of this number, approximately 1,700 were returned.

Returned questionnaires were scored by the staff of the computer center at the University of Virginia under the direction of Dr. Ira Jacobsen. These results were later partially evaluated as part of the 1974 NASA-ASEE System Design Team Project. The project director of this present study was a member of that design team and responsible for the analysis of the questionnaires. A further grant from NASA permitted additional study of socio-economic variables associated with transportation characteristics.

Returned questionnaires were scored by the staff of the computer center at the University of Virginia under the direction of Dr. Ira Jacobsen. The results were evaluated as part of the NASA-ASEE System Design Team Project.

A. DEMOGRAPHIC FACTORS

A total of 1,667 questionnaires have been returned, scored, and run through the computer. This sample of questionnaires can be described according to the following demographic factors:

1. Age
2. Sex
3. Income
4. Marital status
5. Occupation
6. Education
7. Automobile license
8. Own auto
9. Day or night work schedule

1. Age:

The mean average age for this sample is 41.2 years with a median age of 39.73 (std.-10-5 yrs). Age distribution is as follows:

TABLE I

Age Distribution in Percentages

1-10	.1
11-20	8.1
21-30	33.2
31-40	23.7
41-50	18.0
51-60	11.6
61-70	4.0
71-80	1.2
81-	.1

2. Sex:

More males than females completed VMASC questionnaire with 1,052 males returning the forms as compared with 597 females while 17 respondents were undecided!!!

3. Income:

Table II presents percentage breakdown of respondents in different income levels. The \$10,000-\$19,000 income bracket contains the most frequently chosen income range.

TABLE II

Income Distribution in Percentages

Under 10,000	25.2
10,000-19,000	36.7
20,000-29,000	17.7
30,000-39,000	6.8
40,000-	7.1
Blank	6.4

4. Marital Status:

Seventy-one percent of the population were married as opposed to twenty percent who were single. Six percent were supporting dependents (separated, divorced, widowed) while 1.6 percent chose to leave this question unanswered.

5. Primary Occupation:

The sample drawn by the Jaycees appears to be a composition of two major occupational levels, professional and managerial, with these two groups representing over 60 percent of the respondents. Considering the group membership of the Jaycees, these demographic characteristics of the sample population are not surprising. Table III presents a further breakdown of the sample into different occupational backgrounds.

TABLE III

Occupational Breakdown in Percentages

Homemaker	7.7
Student	8.6
Sales	4.4
Craftsman	5.2
Secretary, Clerical	7.6
Professional	25.0
Farming, Fishing, Forestry, etc.	.2
Manager, Office Executive	23.8
Other	17.5

6. Education:

Almost fifty-nine percent of the sample had at least some college education and over 13.6 percent had advanced college degrees. This is slightly above the national average.

7. Miscellaneous Characteristics:

Ninety percent of the population responded "yes" to "Do you have an automobile driver's license," while 84 percent said they owned a car. Almost 15 percent of the sample did not own a car. Only 3.7 percent of the sample indicated that they worked at night.

B. QUESTIONNAIRE

1. Attitudes on City Living

Question 1 measures attitudes towards city living using a 7-point Likert-type scale ranging from "agree very much" to "disagree very much." The questionnaire lists six characteristics associated with city living which are as follows:

traffic
good shopping
pollution
entertainment, social and cultural opportunities
noise
not a safe environment

The respondents were asked to agree or disagree with statements regarding each of the above characteristics.

Table IV presents a summary of responses in percentages to each of the six questions.

Results seem to indicate that respondents had no strong agreements or disagreements toward statements made in question one.

The most frequently occurring response (mode) for all subquestions was "agree some."

Relatively stronger responses were found for two city characteristics. The sample population indicated some consensus on pollution as a nonattractant in city living while agreeing with the statement that city living offers the advantages of entertainment and culture.

TABLE IV
Characteristics of City Living

	Agree			No Opinion	Dis- agree some	Dis- agree much	Dis- agree Very Much
	Very Much	Agree Much	Agree Some				
I <u>dislike</u> city (urban) living because of traffic	21.1	16.6	29.9	9.2	12.0	5.0	5.8
I <u>like</u> city (urban) living because of the good shopping	21.5	23.8	30.7	7.6	9.1	4.5	2.8
I <u>dislike</u> city (urban) living because of pollution	24.3	17.1	26.6	14.0	10.2	4.1	3.7
I <u>like</u> city (urban) living because of the entertainment, social, and cultural opportunities	31.7	23.8	25.4	9.4	4.8	2.1	2.8
I <u>dislike</u> city (urban) living because of noise	19.9	15.6	28.2	14.4	12.3	4.4	5.1
I <u>dislike</u> city (urban) living because it is not a safe environment	20.7	13.2	28.5	11.8	15.6	5.2	5.1

Percentage of Respondents in Different Attitude Categories

2. Choice of Living Environment

Question No. 2 explores urban versus suburban living preferences. It is assumed that, given an adequate mass transportation system, individuals would prefer to live in more remote areas if they were still able to enjoy the advantages of city living. About sixty percent (62.5%) responded "yes" to this question, while twenty-four percent responded "no."

TABLE V

3. If you could be provided with a highly desirable public transportation system of future design that would meet your requirements, would you like to live in an environment removed from the city?

Yes	62.5%
No	24.2%
No opinion	13.3%

3. Transportation System Characteristics

Table VI presents the mean ranks and standard deviations for each of the transportation system characteristics for all age groups and income levels.

TABLE VI-A

<u>Characteristics</u>	\bar{X}	Rank Std.	order
Easily Accessible	2.6	1.8	1
Fast	3.9	1.9	3
Cheap	4.5	2.05	5
Modern/attractive/cheap	4.7	1.9	6
Operated with frequent service	3.8	1.9	3
Connected to large number of points within my region	4.7	2.0	7
Dependability	3.5	2.0	2

These preferred system characteristics have been broken down according to income level and age group. Table VI-B presents system characteristics according to income level while Table VI-C presents data according to representative age groups. Each table gives the mean rank for each characteristic.

TABLE VI-B

<u>Characteristics</u>	Income Level				
	Under 10,000	10,000- 19,999	20,000- 29,999	30,000- 39,999	40,000+
Easily Accessible	3.063	2.528	2.396	2.225	2.396*
Fast	4.351	3.894	3.756	3.524	3.286
Cheap	3.731	4.332	4.926	4.802	6.109
Modern/Attractive/ Clean	4.838	4.842	4.658	4.452	3.796
Operated with frequent service	4.220	4.842	3.532	3.441	3.485
Connected to a large number of points within my region	4.434	3.909	4.822	4.758	5.100
Dependable	2.769	3.493	3.409	3.548	3.447

Mean ranks for system characteristics according to income level

TABLE VI-C

Characteristics	Age of Respondent						
	11-20	21-30	31-40	41-50	51-60	61-70	71-80
Easily Accessible	3.093	2.818	2.260	2.404	2.563	2.500	3.460
Fast	4.032	3.966	3.812	3.758	3.785	3.920	5.533
Cheap	3.738	4.181	4.511	4.884	5.376	3.960	3.113
Modern/Attractive/ Cheap	4.471	4.693	4.926	4.550	4.375	3.725	4.467
Operated with frequent service	4.314	3.989	3.793	3.735	3.164	4.451	5.333
Connected to a large number of points within my region	4.295	4.469	4.692	4.842	5.084	5.708	5.267
Dependable	3.832	3.626	3.324	3.519	3.263	4.320	4.601

Mean rank for system characteristics according to age

4. "Accessibility" Defined

The results found in Table VII indicate that transportation system characteristics were relatively nondiscriminating items in terms of the sample population's choices. It is interesting to note that accessibility was ranked higher than cheapness. A similar statement can also be made for dependability, indicating that the potential consumer values accessibility and dependability over cost factors.

Although the results found in Table VII indicate that transportation system characteristics were relatively nondiscriminating

items of the sample population's choices, it is interesting that accessibility was ranked higher than economy. A similar statement can also be made for dependability, indicating that the potential consumer values accessibility and dependability over cost factors.

Table VI indicated that accessibility was ranked by the sample population as the most important characteristic of mass transportation. Question number five asked the respondent to indicate his definition of "accessibility." Table VII presents a summary of responses to this question.

TABLE VII-A

Percentage of Responses to Question on Accessibility

I mean one of the following as the maximum acceptable when I describe public transportation as easily accessible:

4 miles from home (auto parking available) and 3 blocks from work.....	13.7%
3 miles from home (auto parking available) and 3 blocks from work.....	6.3%
2 miles from home (auto parking available) and 3 blocks from work.....	28.2%
No opinion.....	15.8%
None of the above--I mean <u> </u> miles from home and <u> </u> blocks from work.....	35.8%

Twenty-eight percent defined "accessibility" as public transportation which is two miles from home and three blocks from work, while thirty-five percent held opinions which were not included on this questionnaire. A random sample of this thirty percent indicated a definition of less than two miles from home and three blocks from work.

Accessibility was perceived differently at various income levels as indicated in Table VII-B. Table VII-C presents responses to question five according to different age groups.

TABLE VII-B

	Income Level				
	Under 10,000	10,000- 19,999	20,000- 29,999	30,000- 39,999	40,000+
4 miles from home	.2%	14.5%	9.2%	16.8%	14.3%
3 miles from home	10.2%	6.0%	6.8%	4.4%	10.9%
2 miles from home	19.8%	27.1%	28.5%	27.4%	28.6%
No opinion	19.8%	12.6%	10.2%	8.8%	10.9%
None of above	26.7%	32.5%	38.6%	38.1%	28.6%

TABLE VII-C

	Age of Respondent						
	11-20	21-30	31-40	41-50	51-60	61-70	71-80
4 miles from home	10.7%	14.9%	10.7%	11%	13.4%	1.5%	5.3%
3 miles from home	9.2%	6.3%	6.3%	5.2%	3.7%	10.8%	5.3%
2 miles from home	13%	29.5%	27.7%	22.7%	24.1%	33.1%	5.3%
No opinion	53.4%	13.8%	13.6%	10.0%	11.8%	9.1%	10.9%
None of above	12.9%	35.4%	47.4%	41.2%	34.2%	49.4%	74%

Results suggest that accessibility as defined according to geographic proximity is related, at least in part, to both income level and age of respondent. Nineteen percent of the respondents with incomes under ten thousand dollars chose to define an accessible mass transportation system as one which was no more than two miles from home and brought the commuter to within three blocks of his work environment. This nineteen percent can be compared with 28.6% of the respondents with incomes above \$40,000 who chose the same operational definition of accessibility. One could conclude that as income level increases there is a concomitant rise in system demand.

One finds a similar trend with age levels. As the age of the respondent increased, there was a greater need for a mass transportation system which was close to both the living and work areas. In the 61-70 and 71-80 age levels we find this particularly pronounced. This trend is reasonable when one considers the decreased motoric ability which all too often accompanies age.

5. "Fast" Defined

Speed was also perceived by the sample population as a relatively important characteristic of an effective public transportation system.

Transportation was described as fast most frequently as twenty minutes to work and twenty minutes to major entertainment, shopping, and social facilities. Table VIII presents a percentage breakdown of responses to each category. It is interesting to note that the overall response to question 6 indicates that the average respondent

expects an adequate mass transportation system to provide the same advantages afforded by the private automobile.

TABLE VIII-A

Percentage of Response to Question 6

When I describe transportation as fast, I mean one of the following as acceptable:

30-45 minutes to work.....	5.4%
30-45 minutes to work and 30-45 minutes to major entertainment, shopping, and social facilities.....	6.2%
30 minutes to work.....	5.0%
30 minutes to work and 30 minutes to major entertainment, shopping, and social facilities.....	13.1%
25 minutes to work.....	3.7%
25 minutes to work and 25 minutes to major entertainment, shopping, and social facilities.....	9.9%
20 minutes to work.....	6.9%
20 minutes to work and 20 minutes to major entertainment, shopping, and social facilities.....	21.5%
15 minutes to work.....	6.2%
15 minutes to work and 15 minutes to major entertainment, shopping, and social facilities.....	17.4%
None of the above--I mean.....	4.7%

TABLE VIII-B

When I describe transportation as fast, I mean one of the following as acceptable:

		<u>Income Level</u>			
	Under 10,000	10,000- 19,999	20,000- 29,999	30,000- 39,999	40,000+
30-45 minutes to work	6.0%	4.15	4.7%	6.2%	5.9%
30-45 minutes to work and 30-45 minutes to major entertainment, shopping, and social facilities	6.2%	6.0%	4.4%	6.2%	5.9%
30 minutes to work	2.9%	4.2%	7.5%	5.3%	6.7%
30 minutes to work and 30 minutes to major entertain- ment, shopping, and social facilities	6.2%	14.1%	5.6%	16.8%	13.4%
25 minutes to work	3.3%	1.6%	3.7%	5.3%	1.7%
25 minutes to work and 25 min- utes to major entertainment, shopping and social facilities	18.1%	9.5%	11.9%	9.7%	9.2%
20 minutes to work	6.7%	7.7%	7.5%	6.2%	5.6%
20 minutes to work and 20 minutes to major entertain- ment, shopping, and social facilities	9.0%	20.9%	17.6%	24.8%	22.7%
15 minutes to work	7.4%	5.9%	5.1%	6.2%	2.5%

15 minutes to work and 15 minutes to major entertain- ment, shopping, and social facilities	15.2%	16.0%	16.3%	7.1%	14.3%
None of the above--I mean	11.3%	9.9%	5.7%	11.2%	11.7%

TABLE VIII-C

When I describe transportation as fast, I mean one of the following as acceptable:

	11-20	21-30	31-40	41-50	51-60	61-70
30-45 minutes to work	3.9%	3.9%	3.1%	4.5%	9.4%	7.7%
30-45 minutes to work and 30-45 minutes to major enter- tainment, shopping, and social facilities	7.6%	6.2%	5.5%	6.8%	8.6%	1.5%
30 minutes to work	1.5%	3.5%	5.2%	8.2%	3.2%	15.4%
30 minutes to work and 30 minutes to major enter- tainment, shopping, and social facilities	3.8%	8.2%	15.9%	14.1%	15.0%	4.6%
25 minutes to work	6.9%	3%	3.4%	2.4%	2.7%	6.2%
25 minutes to work and 25 minutes to major enter- tainment, shopping, and social facilities	.8%	9.7%	8.4%	10.3%	8.0%	9.2%
20 minutes to work	9.2%	7.1%	5.5%	5.5%	6.4%	9.2%
20 minutes to work and 20 minutes to major enter- tainment, shopping, and social facilities	5.3%	21.3%	20.4%	19.6%	22.8%	4.6%
15 minutes to work	16.0%	6.7%	6.8%	4.1%	3.2%	1.5%
15 minutes to work and 15 minutes to major enter- tainment, shopping, and social facilities	8.4%	18.1%	13.3%	13.4%	11.2%	7.7%
None of the above--I mean	29.0%	12.4%	13.8%	5.8%	3.7%	40.9%

Data presented in Tables VIII-B and VIII-C suggests that income level and age are not significant factors in the perception of speed as a system characteristic. Each age and income group perceive similar needs in a mass transportation in relationship to speed.

6. "Economy" Defined

While economy was not ranked as a relatively important system characteristic, there was a general consensus on the part of over half the respondents on agreeing that an economical system should charge less than the operating costs of a private vehicle. Only twenty-six percent of the sample population who responded to this question felt that public transportation should be as expensive or more expensive than the out-of-pocket automobile cost. Table IX gives responses in percentages to Question 7.

TABLE IX

When I describe public transportation as cheap within my living and working region, I mean one of the following:

Cost slightly more than out-of-pocket expense for the operation of private auto.....	5.8%
Cost equal to out-of-pocket expense for the operation of private auto.....	12.9%
Cost equal to out-of-pocket expense for the operation of private auto plus parking expense....	9.4%
Cost less than out-of-pocket expense for the operation of private auto.....	40.5%
Cost greatly less than out-of-pocket expense for the operation of private auto.....	24.5%
No opinion.....	6.9%

A random sample of questionnaires indicates that the model estimate of cost is approximately \$1.50 per day (as indicated in question 8). Consequently, one can assume that the potential consumer of mass transportation is looking for a system which will fall below this cost level on a daily basis.

TABLE IX-B

When I describe public transportation as cheap within my living and working region, I mean one of the following:

	<u>Income Level</u>				
	Under 10,000	10,000- 19,999	20,000- 29,999	30,000- 39,999	40,000+
Cost <u>slightly more</u> than out-of-pocket expense for the operation of private auto	4.8%	4.9%	5.8%	6.2%	26.1%
Cost <u>equal</u> to out- of-pocket expense for the operation of private auto	6.7%	11.6%	16.6%	15.0%	2.5%
Cost <u>equal</u> to out- of-pocket expense for the operation of private auto plus parking expense	33.6%	41%	40.0%	34.5%	26.9%
Cost <u>less</u> than out- of-pocket expense for the operation of private auto	26.9%	23.0%	17.6%	21.2%	6.7%
Cost <u>greatly less</u> than out-of-pocket expense for the operation of private auto	10.0%	4.6%	4.1%	7.1%	--
No opinion	12.6%	5.6%	4.1%	6.2%	5.9%

TABLE XI-C

	<u>Age Group</u>					
	11-20	21-30	31-40	41-50	51-60	61-70
Cost <u>slightly more</u> than out-of-pocket expense for the operation of private auto	6.1%	25.4%	5.5%	6.9%	5.9%	9.2%
Cost <u>equal</u> to out- of-pocket expense for the operation of private auto	4.6%	3.0%	13.3%	13.4%	14.4%	15.4%
Cost <u>equal</u> to out- of-pocket expense for the operation of private auto plus parking expense	10.7%	26.5%	8.4%	8.1%	11.8%	7.7%
Cost <u>less</u> than out- of-pocket expense for the operation of private auto	38.2%	31.9%	37.1%	33.3%	33.2%	24.6%
Cost <u>greatly less</u> than out-of-pocket expense for the operation of private auto	26.2%	6.2%	21.9%	21.6%	21.4%	23.1%
No opinion	8.4%	14.2%	13.1%	16.6%	13.3%	16.9%

Data presented in Tables IX-B and IX-C suggests that the acceptable cost of mass transportation is more closely related to income level than age. As one might predict, as one's income level increases, the cost of mass transportation which is tolerable also increases.

7. Other Transportation Characteristics Defined

Table X presents percentages of responses to questions 9, 10, and 11. Results indicated little general agreement on what constitutes frequent service. Twenty-six percent chose a 30-minute delay between buses as sufficiently frequent, while twenty-seven percent would be satisfied with no more than a 15-minute wait between scheduled service.

Regular service was defined by fifty-five percent of the sample population as meaning regular service between the hours of 6 a.m. and 8 p.m. with less frequent runs through the remainder of the night. Thirty-four percent of the sample desired service beyond the hour of midnight.

The need for inter-modal mass transportation was perceived by almost seventy-five percent of the sample population. Forty-three percent agreed strongly to the need for connections between city buses and airports or intercity train stations. Only seven percent disagreed.

TABLE X

When I say frequent service, I mean one of the following as the maximum time acceptable:

30 minutes between scheduled service.....	29.1%
25 minutes between scheduled service.....	3.7%
20 minutes between scheduled service.....	32.1%
15 minutes between scheduled service.....	28.6%
None of the above--I mean.....	6.5%

To be of real value to me, the public transportation must be in regular service:

7:00 a.m. to 7:00 p.m.....	21.8%
6:00 a.m. to 8:00 p.m.....	10.2%
6:00 a.m. to 8:00 p.m. with less runs between 8:00 p.m. and 12:00 midnight.....	21.5%
6:00 a.m. to 8:00 p.m. with less runs between 8:00 p.m. and midnight plus some runs between midnight and 6:00 a.m.....	36.7%
No opinion.....	5.3%
None of the above.....	4.4%

The type transportation suggested would also have to connect directly with: major and regional airports, and intercity train and bus stations.

Agree very much.....	46.1%
Agree much.....	14.3%
Agree some.....	20.2%
No opinion.....	12.4%
Disagree some.....	3.5%
Disagree much.....	1.2%
Disagree very much.....	2.2%

8. Public Transportation Use in Future

Fifty-eight percent responded to question twelve affirmatively regarding public transportation use. Twelve percent of the sample indicated little perceived use of future public transportation systems.

TABLE XI

Future Mass Transportation Uses

If a public transportation system of the future was provided that met my requirements, I would leave my car in my immediate home area.

Nearly all the time.....	22.0%
Most of the time.....	23.9%
Much of the time.....	19.3%
Some of the time.....	18.5%
No opinion.....	4.8%
Very little of the time.....	6.9%
Never.....	4.6%

9. Current Use Statistics

Table XII presents the percentage of the sample which currently uses public transportation. Six percent of the sample currently uses public transportation to work while 80 percent uses the private auto.

TABLE XII

Do you currently use a private auto or public transportation as your transportation to work?

Private auto.....	80.5%
Public Transportation.....	5.8%
Blank.....	13.7%

This questionnaire is an effort by the Virginia Metro Areas Study Commission to obtain information from the public to be used in planning and designing future transportation systems for Virginia. The goal is to identify your needs and desires so they can be better satisfied by future systems. This effort is intended primarily to better define the factors important to traveler's selection either of public transportation, or of his own vehicle for trips within the region.

We would like only your first impression on each question and you need not answer any questions that offend you.

Thank you very much for your help and cooperation.

Coordinated and distributed by Tidewater area Jaycees chapters in cooperation with Virginia Metro Areas Study Commission.

BACKGROUND INFORMATION:

1. Age _____ Zip Code _____ 2. Sex: Male Female

3. Approximate yearly household income (before taxes):

Under \$10,000 \$10,000 - \$19,999 \$20,000 - \$29,999
 \$30,000 - \$39,999 \$40,000 or more

4. Marital Status:

Single Married Not presently married, but supporting dependents

5. Primary occupation: (check one)

Homemaker Craftsman, Mechanic Farming, Fishing, Forestry, etc.
 Student Secretary, Clerical Manager, Official, Executive
 Sales Professional Other _____

6. Education: (Check your highest level of achievement)

Some high school Some college Advanced college degrees
 High school graduate College graduate

7. Do you have an automobile drivers license Yes No

8. Do you own an automobile? Yes No

9. Are you working on a day or night schedule? Day Night

QUESTIONNAIRE

1. Please place check in box that best expresses your attitude regarding the statements listed on the left side of the table below.

	Agree Very Much	Agree Much	Agree Some	No Opinion	Disagree Some	Disagree Much	Disagree Very Much
I dislike city (urban) living because of traffic							
I like city (urban) living because of the good shopping							
I dislike city (urban) living because of pollution							
I like city (urban) living because of the entertainment, social, and cultural opportunities							
I dislike city (urban) living because of noise							
I dislike city (urban) living because it is not a safe environment							

2. If there are any strong dislikes or likes omitted from the question above, please indicate your feelings in this space.

3. If you could be provided with a highly desirable public transportation system of future design that would meet your requirements, would you like to live in an environment removed from the city?

{ } Yes
 { } No
 { } No opinion

Please rank the following list of transportation system characteristics as to the importance to you. In the boxes provided, place the numbers identifying your order of preference.

- Easily accessible
- Fast
- Cheap
- Modern/attractive/clean
- Operated with frequent service
- Connected to large number of points within my region
- Dependability
- Some other feature known to you _____

Your Ranking

1 2 3 4 5 6 7 8

I mean one of the following as the maximum acceptable when I describe public transportation as easily accessible:

- { } 4 miles from home (auto parking available) and 3 blocks from work
- { } 3 miles from home (auto parking available) and 3 blocks from work
- { } 2 miles from home (auto parking available) and 3 blocks from work
- { } No opinion
- { } None of the above - I mean _____ miles from home and _____ blocks from work

When I describe transportation as fast, I mean one of the following as acceptable:

- { } 30-45 minutes to work
- { } 30-45 minutes to work and 30-45 minutes to major entertainment, shopping, and social facilities
- { } 30 minutes to work
- { } 30 minutes to work and 30 minutes to major entertainment, shopping, and social facilities
- { } 25 minutes to work
- { } 25 minutes to work and 25 minutes to major entertainment, shopping, and social facilities
- { } 20 minutes to work
- { } 20 minutes to work and 20 minutes to major entertainment, shopping, and social facilities
- { } 15 minutes to work
- { } 15 minutes to work and 15 minutes to major entertainment, shopping, and social facilities
- () None of the above - I mean _____

When I describe public transportation as cheap within my living and working region, I mean one of the following:

- { } Cost slightly more than out-of-the-pocket expense for the operation of private auto
- { } Cost equal to out-of-pocket expense for the operation of private auto
- { } Cost equal to out-of-pocket expense for the operation of private auto plus parking cost
- { } Cost less than out-of-pocket expense for the operation of private auto
- { } Cost greatly less than out-of-pocket expense for the operation of private auto
- { } No opinion

Approximately what does it cost you to travel to and from work with your auto _____
plus _____ for parking.

9. When I say frequent service, I mean one of the following as the maximum time acceptable:

{ } 30 minutes between scheduled service
{ } 25 minutes between scheduled service
{ } 20 minutes between scheduled service
{ } 15 minutes between scheduled service
{ } None of the above - I mean _____

10. To be of real value to me, the public transportation must be in regular service:

{ } 7:00 a.m. to 7:00 p.m.
{ } 6:00 a.m. to 8:00 p.m.
{ } 6:00 a.m. to 8:00 p.m., with less runs between 8:00 p.m. and 12:00 midnight
{ } 6:00 a.m. to 8:00 p.m., with less runs between 8:00 p.m. and midnight plus some runs between midnight and 6:00 a.m.
{ } No opinion
{ } None of the above

11. The type transportation suggested would also have to connect directly with: major and regional airports, and intercity train- and bus-stations.

{ } Agree very much
{ } Agree much
{ } Agree some
{ } No opinion
{ } Disagree some
{ } Disagree much
{ } Disagree very much

12. If a public transportation system of the future was provided that met my requirements, I would leave my car in my immediate home area.

{ } Nearly all the time
{ } Most of the time
{ } Much of the time
{ } Some of the time
{ } No opinion
{ } Very little of the time
{ } Never

13. What do you currently estimate as the time required for you to travel from home to work?

14. Do you currently use a private auto or public transportation as your transportation to work?

{ } Private auto
{ } Public transportation

15. How many miles do you travel to work? _____

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